

REMARKS

Claims 1-22 are pending in the present application, and are rejected.

Double Patenting

Claims 1-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,881,311 in view of Kadokura et al. (U.S. Pat. 4,784,739) and Madocks (US PG Pub 2004/0149574).

The Examiner concludes that it would have been obvious to one of ordinary skill in the art at time the invention was made to have modified U.S. Pat. No. 6,881,311 by providing an auxiliary electrode to absorb electrons as taught by Kadokura et al. and Madocks because it allows for capturing electrons.

Applicants respectfully disagree with and traverse the rejection, because in the sputtering apparatus of Kadokura et al., the reflecting electrode 110 has a negative potential and cannot absorb electrons, and the apparatus has no anode other than anode electrode 130. Therefore, it would not have been obvious to locate an auxiliary electrode which absorbs electrons in a plasma space.

With respect to the auxiliary anode limitation, the Examiner notes that Kadokura et al. teaches an electrode 110 that could constitute a frame of the apparatus. The Examiner asserts that electrode 110 is an anode because Kadokura et al. indicates that it can be “positively” charged (column 8, lines 29-35).

Applicants note that electrode 110 is not anode, and therefore this limitation is not met by the cited combination of references.

Applicants submit that one might inadvertently interpret that the reflecting electrode 110 has an electrically positive potential, because Kadokura et al. indicates “when an electric potential is *positively* charged from an electric power source to the reflecting electrode 110, the electrode 110 is preferably made of an electro-conductive material” (column 8, lines 31-34). But the interpretation is not correct. The word “positively” in the above sentence does not mean “electronically positively.” The word in the sentence should be understood to be “actively” or “intentionally.” So the meaning of the sentence is that the electrode 110 is made of an electro-conductive material when actively charging the electrode 110 by an electric power source.

Applicants note that in the sputtering apparatus disclosed in Kadokura et al., the reflecting electrode 110 reflects electrons. Therefore, the electrode 110 has a negative potential (column 6, lines 16-21). Electrode 110 is therefore not an anode.

The Examiner asserts that Kadokura et al. specifically teach that the location of the anode 130 can be adjusted to control the amount of capturing of electrons, and concludes that this would suggest to one skilled in the art to locate the anode in the anode plasma space.

Applicants disagree with the above, because anode 130 is not taught to be located in plasma.

Applicants note that in the sputtering apparatus of Kadokura et al. the anode is placed to supply a sputtering power and also form an electric field with the target of cathode to confine the plasma, namely electrons. Therefore, the anode is located outside of plasma as depicted in Fig. 1

of Madocks '574. This is affirmed by the nature that a substantially constant potential is maintained throughout in a plasma. Kodokura et al. only teach that by adjusting the location of the anode electrode 130, it is possible to control the erosion of the target T and the thickness of a sputtered material film on the substrate S (column 7, lines 59-62). Kadokura et al. do not teach or even suggest locating the anode electrode 130 in the plasma space.

Therefore, even if the above cited references were properly combined, not all of the claimed limitations would be taught or suggested by the cited combination of references. Applicants request reconsideration of the rejections.

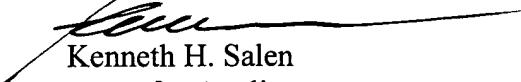
In view of the aforementioned remarks, Applicants submit that that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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